



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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August 29, 1991

Mr. Max J. Reynolds
Vice President, Operations
Great Salt Lake Minerals & Chemicals Corp.
P. O. Box 1190
765 North 10500 West
Ogden, Utah 84402

Dear Mr. Reynolds:

Re: Conditional Approval, Notice of Intention to Amend Large Mining Operations,
West Shore Dike and Underwater Channel Project, Great Salt Lake Minerals &
Chemicals Corp. (GSLM), M/057/002, Weber County, Utah

The Division has completed its review of GSLM's permit amendment and is prepared to grant its approval, subject to GSLM's written acceptance of the following conditions:

R613-004-105 Maps, Drawings & Photographs.

GSLM must provide a map clearly identifying the proposed disturbance at the Strong's Knob Borrow Area. The amendment mentioned 20 acres out of 57 will most likely be disturbed but no exact boundary was shown outlining these 20 acres.

GSLM must provide typical cross-sectional drawings of the pit/quarry at the borrow area and a cross-section of the proposed post-reclamation configuration of this quarry.

R613-004-107 Operation Practices.

It is understood that GSLM will limit access to the hazards located at the quarry site and on the dike, by keeping a locked gate on the road. Please acknowledge this in writing and describe the location of the gate(s).

GSLM did not present a concurrent reclamation plan. It is unclear whether concurrent reclamation will or can be applied to the surface disturbances associated with this amendment. Please clarify this point of uncertainty.

R613-004-109 Impact Assessment

A more detailed description of the quarry configuration at the borrow area must be provided in order to assess the impact. This requirement may be met by providing the drawings requested in R613-004-105 above.

R613-004-110 Reclamation Plan

GSLM must provide a reclamation plan which describes the reclamation activities for all aspects of this project in detail. This would include the reclamation treatments for the access road, borrow area/quarry (benches, slopes, highwalls, facilities area), dike and pump station. This plan would also include a description of those items which would not receive any reclamation treatments.

Typically, a road would be regraded, ripped and seeded to effectively erase its existence. However, in this case, breaching the section of road which crosses the lake bed would be considered appropriate reclamation.

Topsoil would normally be salvaged and stockpiled from disturbed areas prior to starting mining activity. There is no salvageable topsoil in the road area crossing the lake bed and there is limited topsoil at the quarry site on Strong's Knob. It would be difficult and costly to salvage this limited topsoil resource, given the rocky conditions which exist.

Pit slopes or highwalls are required to be at a 45-degree (or less) angle at final reclamation. Pit benches would usually be ripped, topsoiled and revegetated. Conditions at Strong's Knob would allow the quarry to meet the 45-degree requirement, but the rocky conditions do not warrant ripping, topsoiling and reseeding of the quarry benches.

Any dumps which will remain should have a slope angle of 3h:1v or less at final reclamation. The Division is unaware of any dumps associated with this amendment, but GSLM should clarify this. Dikes are generally breached or removed in order to

prevent them from impounding water. The dike in this amendment would need to be breached in several places to accomplish this, due to it's considerable length.

The reclamation plan should describe any surface facilities to be left at the time of final reclamation, or any structures or facilities which would be buried or removed.

R613-004-112 Variance

The operator needs to formally request variances for any deviation from the rules, along with any evidence or explanation for requesting each variance. This would include deviation from topsoil salvaging requirements, deviation from reseeding requirements, or any deviation from the reclamation practices listed in the rules.

The Division acknowledges that the areas currently encompassing the access road and dike will most likely not support vegetation, since these areas are within the waters or lake bed of the Great Salt Lake. The Division is aware that the access road is under an easement agreement with State Lands & Forestry and that the final disposition of this road (reclaim or remain) is to be decided by State Lands at a later time. Until that time, it is assumed that the road would only need to be reclaimed by breaching in several places.

R613-004-112 Surety

GSLM has not provided a surety estimate for the reclamation of the items contained in this amendment. The Division has calculated a reclamation cost estimate, based on the information provided in the amendment and several assumptions. These assumptions are provided in the cost estimate which is attached. GSLM may accept this cost estimate or provide their own reclamation estimate to the Division for review. GSLM may also wish to provide supplemental information which would clarify those assumptions contained in the Division's estimate.

GSLM currently has a surety in the amount of \$186,500 in 1990 dollars. This surety is annually renewable and has an expiration date of August 31, 1991. The Division would propose that GSLM increase the bond amount by \$37,917 (1991 dollars). Adding this to the 1991 escalated value of the current surety gives a total bond amount of \$228,000 at the time of the next renewal. This increase is based upon

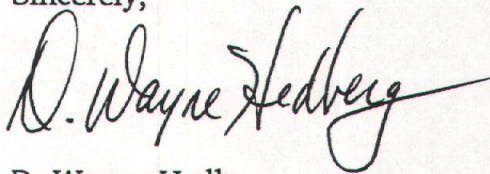
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the Division's estimate (see attachment) of the reclamation costs for this amendment, using the information provided thus far.

GSLM must provide a written commitment to the conditions listed above and provide the additional requested information to the Division as soon as possible, but no later than September 30, 1991. It is the Division's position that the additional reclamation surety must be posted before actual construction on the dike begins.

If you have any questions regarding the content of this letter, please contact me or Tony Gallegos of the Minerals staff. Thank you for your efforts in completing this permitting action.

Sincerely,

A handwritten signature in dark ink, reading "D. Wayne Hedberg". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

aag/jb
Attachment
cc: Tony Gallegos, DOGM
Lowell Braxton, DOGM
M057002.3

RECLAMATION ESTIMATE

Great Salt Lake Minerals & Chemicals Corporation

West Shore Dike & Underwater Channel Project – AMENDMENT

Weber County M/057/002 last revision 8/29/91

Prepared by Utah State Division of Oil, Gas & Mining

Reclamation Details

- These details are for reclamation of the amendment features only
- Unit costs are from the 1989 DOGM estimate plus actual escalation
- ASSUMED: 20 acres of disturbance at 57 acre borrow area on Strongs Knob
- ASSUMED: All quarry slopes at 45 degrees or less in borrow area
- ASSUMED: No regrading or revegetation activities at the borrow area
- New dike approximately 8.5 miles long(Strong's Knob to Fingerprint)
- ASSUMED: A breach in the dike every mile
- New pond area of approximately 17,000 acres; NO RECLAMATION
- New pumping station at Finger Point; ASSUME all structures removed
- Access road portion across lake bed, approx. 1 1/4 miles; total road 3 miles
- Road on State Lands easement; ASSUME breach in lake bed every 1/2 mile
- 20 miles of underwater channel in the Great Salt Lake: NO RECLAMATION
- Reclamation estimate to be calculated in 1991 dollars
- This amount to be added to the 1991 surety update for the entire operation
- Surety to be renewed annually until the 5-year review date in 1994

<u>Description</u>	<u># Units</u>	<u>\$/Unit</u>	<u>Cost(\$)</u>
Breaching dike	8 each	1,247	9,976
Removal of pump station facilities	1 sum	20,000	20,000
Breaching access road	2 each	1,247	2,494
Mobilization	1	2,000	2,000
SUBTOTAL			34,470
+ 10% CONTINGENCY			3,447
AMENDMENT TOTAL 1991 – \$			37,917
ENTIRE OPERATION RECLAMATION SURETY IN 1990 – \$			186,500
ESCALATED USING 1.93% TO 1991 VALUE =>			190,099
ADD IN AMENDMENT RECLAMATION COST			<u>37,917</u>
SURETY AMOUNT – ENTIRE OPERATION (1991-\$)			228,016
ROUNDED AMOUNT-ENTIRE OPERATION (1991-\$)			\$228,000